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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,409	01/21/2004	Gerard D. Agnew	84732/2900 TAL	1209
20736 7590 10/16/2007 MANELLI DENISON & SELTER 2000 M STREET NW SUITE 700 WASHINGTON, DC 20036-3307			EXAMINER MERCADO, JULIAN A	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 10/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/760,409

**Applicant(s)**

AGNEW ET AL.

**Examiner**

Julian Mercado

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 27-55 is/are pending in the application.
- 4a) Of the above claim(s) 30,35-41,43,45-48 and 51-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,27-29,32-34,42,44,49 and 56 is/are rejected.
- 7) ☒ Claim(s) 31, 50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Remarks*

This Office action is responsive to applicant's amendment filed on July 27, 2007.

### *Election/Restrictions*

Claims 30, 35-41, 43, 45-48 and 51-55 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 27, 2007.

Claims 1, 27-29, 31-34, 42, 44, 49, 50 and 56 are pending for consideration.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 42 and 44 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 42 recites the limitation "the centre lines" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 44 recites the limitation "the centre lines" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

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***Claim Rejections - 35 USC § 102***

The rejection of claims 1-4 under 35 U.S.C. 102(b) based on Gardner et al. (U.S. Pat. 5,486,428) has been withdrawn.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 27-29, 42, 44, 49 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishida (U.S. Pat. 5,270,129).

For claims 1, 27, 28, 49, Ishida teaches a solid oxide fuel cell stack comprising a plurality of solid oxide fuel cell modules [23], each module comprising an elongate hollow member [17] having flat surfaces and a passage extending longitudinally therethrough for the flow of a reactant, the surfaces of adjacent modules being arranged substantially parallel and spaced apart, wherein the end of a module is connected to adjacent module to allow reactant to flow sequentially through the modules. See Figure 6 and col. 6 line 25 et seq. The modules are connected via connector [14a]. (ib.)

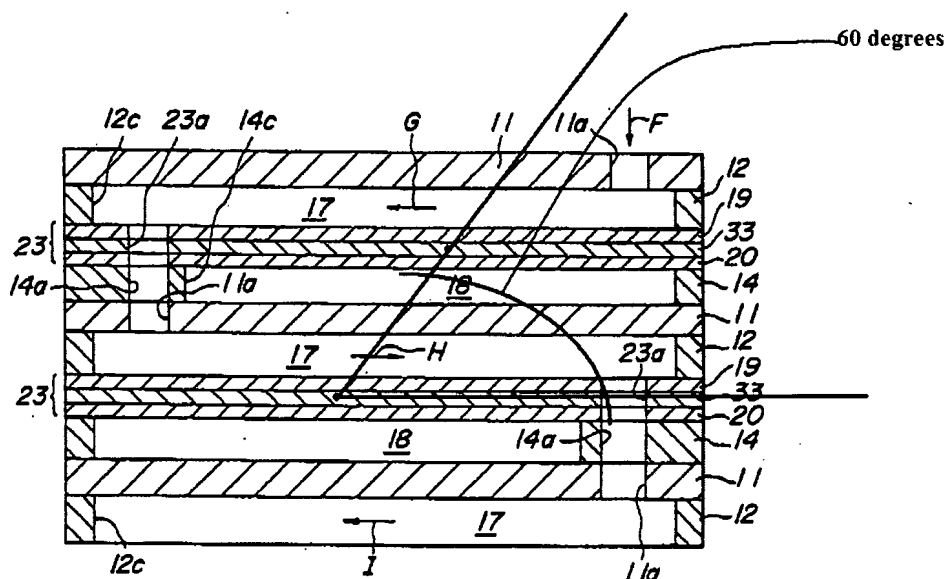
As to the claimed reduction in the “thermal and mechanical stresses in the solid oxide fuel cell stack...”, as set forth in the prior Office action, this limitation has not been given patentable weight as it drawn to a functional limitation; the examiner asserts that the instant “solid oxide fuel cell stack” must be distinguished from the prior art in terms of structure rather than function.

For claim 29, the hollow member has a plurality of passages [11a] and [23a]. (ib.)

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For claim 42, and to the extent that this claim is understood by the examiner notwithstanding the 35 U.S.C. 112, second paragraph rejection (discussion above), the modules [23] in Ishida share a common plane (such as the plane of the page) and are considered undulating insofar as having sequential 180° turns for the reactant stream. (shown by the arrows) This feature is also considered readable on claim 56.

For claim 44, and to the extent that this claim is understood by the examiner notwithstanding the 35 U.S.C. 112, second paragraph rejection (discussion above), in Ishida the center lines of the modules are estimated as approximately 60°.



### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (U.S. Pat. 5,270,129) in view of Khandkar et al. (U.S. Pat. 5,712,055)

The teachings of Ishida are discussed above.

Ishida does not explicitly teach a plurality of fuel cells in each module. However, it is asserted that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Notwithstanding, Khandkar et al. teaches a plurality of fuel cells [74] within a specified module. See col. 6 line 3 et seq. The skilled artisan would find obvious to modify Ishida by employing a plurality of fuel cells. The motivation for such a modification would be to maximize the use of the fuel gases and output for a given level of fuel flow. See col. 6 lines 44-46.

As to a heat exchanger and reformer, in Khandkar et al. an afterburner is specifically disclosed, as is a reformation step. See col. 7 line 1 et seq. The skilled artisan would find obvious to modify Ishida's invention accordingly in order to recover energy from the spent fuel gas.

#### ***Allowable Subject Matter***

Claims 31 and 50 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims:

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The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest the instant invention regarding, in a first embodiment, a plurality of fuel cells on both flat surfaces of the module, and regarding, in a second embodiment, the anode electrodes arranged on the flat surfaces of the elongate hollow member.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. 5,413,878 to Williams et al. is cited of cumulative relevance.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

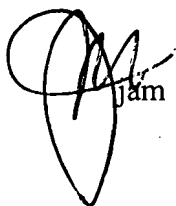
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



jam



PATRICK JOSEPH RYAN  
SUPERVISORY PATENT EXAMINER